## DETAILED ACTION

### *Claim Objections*

1. Claims 18 and 19 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Claims 18 and 19 are dependent on a canceled claim. For the purpose of this Office action, claims 18 and 19 will be considered dependent on claim 11.

### *Claim Rejections - 35 USC § 112*

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim 15 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 15 recites the limitation "the polymer of the formula (I)" in lines 1 and 2 of the claim. There is insufficient antecedent basis for this limitation in the claim.

### *Claim Rejections - 35 USC § 103*

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and

> the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. Claims 11, 13, 14, 17-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Davis et al (US patent 2,283,540) in view of Friese et al (US patent 4,903, 362) in further view in view of Birkhofer et al (US patent 5,914,442).

With regards to claim 11 and 14, Davis et al discloses a number of sulfated oils, such as sulfated cod oil, sulfated neat's-foot oil, sulfated sperm oil, among others, well-known for use in fat-liquoring leather (C1/L5-9). Such oils would be understood by one

having ordinary skill in the art to be sulfated natural oils as well as in an oxidized state in relation to the un-sulfated natural oil by virtue of possessing sulfate.

While Davis et al teaches the use of sulfated natural oils in fat-liquoring leather, the reference does not teach sulfited natural oils.

Friese et al teaches sulfited fats prepared from sea-animal oils, such as whale oil or fish oil, and that such fats are particularly suitable for oiling leather and skins (C1/L30-35). Such fats would be understood by one having ordinary skill in the art to be sulfited natural oils and in an oxidized state in relation to the un-sulfited natural oil by virtue of possessing sulfite. Friese et al also teaches that said sulfited fats may be used together with other oiling agents, such as sulfated fats (C3/L14-18). Friese et al further teaches that suitable emulsifers included alkylene oxide adducts of fatty alcohols (C3/L19-20).

Davis et al and Friese et al disclose analogous inventions related to fat-liquoring leather. Therefore, it would have been obvious to one having ordinary skill in the art at the time of invention to combine the sulfated natural oils taught by Davis et al with the sulfited natural oils taught by Friese et al for the purpose of enhancing oiling, or softening, action in the fat-liquoring process. The combination of the sulfated natural oils taught by Davis et al with the sulfited natural oils taught by Friese et al into a mixture would amount to nothing more than combining two compositions each useful for the same purpose in order to form a third composition used for the same purpose since it has been held that "It is *prima facie* obvious to combine two compositions each of which is taught by the prior art to be useful for the same purpose, in order to form a third

composition to be used for the very same purpose.... [T]he idea of combining them flows logically from their having been individually taught in the prior art." *In re Kerkhoven*, 626 F.2d 846, 850, 205 USPQ 1069, 1072 (CCPA 1980). See MPEP 2144.06.

While modified Davis et al teaches a mixture of modified natural oils, the references do not teach, an emulsifier mixture containing at least one C6- to C14-alkanol alkoxylated with from 4 to 12 alkylene oxide units, at least one C12- to C24-alkanol alkoxylated with from 15 to 40 alkylene oxide units and at least one C12- to C24-alkanol alkoxylated with from 50 to 100 alkylene oxide units.

Birkhofer et al teaches aqueous solutions or dispersions suitable for fat-liquoring and filling leather (C1/L9-13) containing emulsifiers which can be selected from alkoxylated fatty alcohols or oxo alcohols, such as isotridecanol with 8 EO (ethylene oxide) units, C13/C15-oxo alcohol with 21 EO and 4 PO (propylene oxide) units, and tallow fatty alcohol with 50 or 80 EO units, or mixtures thereof (C5/L36).

Modified Davis et al and Birkhofer et al disclose analogous inventions related to fat-liquoring of leather. Therefore, it would have been obvious to one having ordinary skill in the art to combine any of a number of alkoxylated fatty alcohols or oxo alcohols taught by Birkhofer et al into an emulsifier mixture for the purpose of forming an emulsion with the mixture of modified natural oils taught by modified Davis. The combination of any of a number of alkoxylated fatty alcohols or oxo alcohols taught by Birkhofer et al into an emulsifier mixture would amount to nothing more than combining two compositions each useful for the same purpose in order to form a third composition

used for the same purpose since it has been held that "It is *prima facie* obvious to combine two compositions each of which is taught by the prior art to be useful for the same purpose, in order to form a third composition to be used for the very same purpose.... [T]he idea of combining them flows logically from their having been individually taught in the prior art." *In re Kerkhoven*, 626 F.2d 846, 850, 205 USPQ 1069, 1072 (CCPA 1980). See MPEP 2144.06.

With regards to claim 13, modified Davis et al teaches all of the claim limitations set forth above.

While modified Davis et al teaches an emulsifier mixture comprising alkoxylated fatty alcohols or oxo alcohols (Birkhofer et al, C3/L14-42) or mixtures thereof (Birkhofer et al, C5/L36), the references do not teach the emulsifier mixture comprising from 20 to 60 % by weight of component b1 or of a mixture of the components b1, from 20 to 70 % by weight of a component b2 or of a mixture of the components b2 and from 10 to 50 % by weight of a component b3 or of a mixture of the components b3 - based in each case on the total weight of the emulsifier mixture.

However, modified Davis et al does teach that emulsifiers having surface activity in aqueous systems are used (C3/L9). Since surface activity is a variable that can be modified by adjusting the weight percentages of the components of the emulsifier mixture, the weight percentages of the components of the emulsifier mixture would have been considered result effective variables by one having ordinary skill in the art at the time the invention was made. As such, without showing unexpected results, the claimed weight percentages cannot be considered critical. Accordingly, one of ordinary skill in

the art at the time the invention was made would have optimized, by routine experimentation, the weight percentages of the components of the emulsifier mixture to obtain the desired surface activity (*In re Boesch*, 617 F.2d. 272, 205 USPQ 215 (CCPA 1980)), since it has been held that where the general conditions of the claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. (*In re Aller*, 105 USPQ 223).

With regards to claim 17, modified Davis et al teaches all of the claim limitations set forth above.

While modified Davis et al teaches sulfited and sulfated natural oils and emulsifiers comprising alkoxylated fatty alcohols or oxo alcohols, the references do not teach a fatliquoring agent comprising from 45 to 98% by weight of a component A or of a mixture of components A, from 2 to 15 by weight of a component B or of a mixture of components B, and from 0 to 20 by weight of a component C or of a mixture of components C, and from 0 to 20 % by weight of a component D or of a mixture of components D, based in each case on the total weight of the fatliquoring agent.

However, the reference do teach that sulfited fats can be used in combination with sulfated fats and that suitable emulsifiers can be nonionic emulsifiers such as alkylene oxide adducts of fatty alcohols (Friese et al, C3/L14-20). Therefore, it would have been obvious to one having ordinary skill in the art to optimize the weight percentages of component A or mixtures thereof and component B or mixtures thereof for the purpose of obtaining a stable emulsion. Since emulsion stability is a variable that can be modified by adjusting the weight percentages of component A or mixtures

thereof and component B or mixtures thereof, the weight percentages of component A or mixtures thereof and component B or mixtures thereof would have been considered result effective variables by one having ordinary skill in the art at the time the invention was made. As such, without showing unexpected results, the claimed weight percentages cannot be considered critical. Accordingly, one of ordinary skill in the art at the time the invention was made would have optimized, by routine experimentation, the weight percentages of component A or mixtures thereof and component B or mixtures thereof to achieve the desired emulsion stability (*In re Boesch*, 617 F.2d. 272, 205 USPQ 215 (CCPA 1980)), since it has been held that where the general conditions of the claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. (*In re Aller*, 105 USPQ 223).

With regards to claim 18, modified Davis et al teaches all of the claim limitations set forth above.

Modified Davis et al do not specifically teach an aqueous composition comprising 40 to 80 % by weight of said fatliquoring agent.

However, modified Davis et al teaches that sulfited fats can be used in combination with sulfated fats and that suitable emulsifiers can be nonionic emulsifiers such as alkylene oxide adducts of fatty alcohols (Friese et al, C3/L14-20) and that said sulfited fats are distinguished by high water emulsifiability, suggesting the use of sulfited fats in combination with sulfated fats in water with nonionic emulsifiers. Furthermore, modified Davis et al teaches that such compositions are particularly suitable for oiling leather and skins (Friese et al, C4/L40-42). Therefore, since oiling, or lubricating, action

is a variable that can be modified by adjusting the weight percentage of fat-liquoring agent, the weight percentage of fat-liquoring agent would have been considered a result effective variable by one having ordinary skill in the art at the time the invention was made. As such, without showing unexpected results, the claimed weight percentages cannot be considered critical. Accordingly, one of ordinary skill in the art at the time the invention was made would have optimized, by routine experimentation, the weight percentage of fat-liquoring agent to achieve the desired oiling action on leather and skins (*In re Boesch*, 617 F.2d. 272, 205 USPQ 215 (CCPA 1980)), since it has been held that where the general conditions of the claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. (*In re Aller*, 105 USPQ 223).

With regards to claim 19, modified Davis et al teaches all of the claim limitations set forth above.

While modified Davis et al does not teach a process comprising treating leathers or hides with the composition set forth above, it would have been obvious to one having ordinary skill in the art to treat leathers or hides with aqueous liquors of the above composition. When there is a design need or market pressure to solve a problem (fatliquoring leathers and hides) and there are a finite number of identified, predictable solutions (various ways of contacting leathers and hides with fatliquoring composition), a person of ordinary skill has good reason to pursue the known options (contacting leathers and hides with fatliquoring composition) within his or her technical grasp. If this

leads to anticipated success, it is likely the product is not of innovation but of ordinary skill and common sense.

8. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Davis et al (US patent 2,283,540) in view of Friese et al (US patent 4,903, 362) in further view in view of Birkhofer et al (US patent 5,914,442) as applied to claim 11 in further view of Lighthipe et al (US patent 2,630,408).

With regards to claim 12, modified Davis et al teaches all of the claim limitations set for above.

While modified Davis et al teaches a sulfited natural oil, it does not specifically teach that the oxidized sulfited natural oil is obtained by oxidizing natural oil so that the difference Δd between the specific gravities of the unoxidized and oxidized natural oil is from 0.01 to 0.1 g/ml and then reacting the natural oil oxidized in this manner with from 2 to 8 % by weight, based on its weight, of a sulfite - calculated as sodium bisulfite ($Na_2S_2O_5$).

However, modified Davis et al does teach that it is essential to oxidize fats prior to or simultaneously with, for example, by air, sulfitation with alkali and/or ammonium hydrogen sulfite (Friese et al, C1/L15-23). Therefore, it would have been obvious for one having ordinary skill in the art at the time of invention to oxidize then natural oil before sulfitation for the purpose of forming a sulfited natural oil.

Modified Davis et al does not specifically teach a difference Δd between the specific gravities of the unoxidized and oxidized natural oil is from 0.01 to 0.1 g/ml.

However, the references do teach that a decrease in oxidation velocity of the fats lead to products that are difficult to emulsify in water and have poor emulsion stability (Friese et al, C1/L37-40), which suggests that good emulsion stability can be had when increased oxidation velocity, i.e. increased levels of natural oils in oxidized state are achieved. Since the difference Δd between the specific gravities of the unoxidized and oxidized natural oil is indicative of the amount of oxidized natural oil relative to the amount of un-oxidized natural oil, one having ordinary skill in the art would have optimized the difference Δd between the specific gravities of the unoxidized and oxidized natural oil to achieve good emulsion stability. Therefore, since the level of natural oils in oxidized state is a variable that can be modified by adjusting the difference Δd between the specific gravities of the unoxidized and oxidized natural oil, the difference Δd between the specific gravities would have been considered a result effective variable by one having ordinary skill in the art at the time the invention was made. As such, without showing unexpected results, the claimed the difference Δd cannot be considered critical. Accordingly, one of ordinary skill in the art at the time the invention was made would have optimized, by routine experimentation, the difference Δd to maximize the level of oxidized natural oil in order to achieve good emulsion stability (*In re Boesch*, 617 F.2d. 272, 205 USPQ 215 (CCPA 1980)), since it has been held that where the general conditions of the claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. (*In re Aller*, 105 USPQ 223).

While modified Davis et al teaches reacting the oxidized natural oil with a sulfite (Friese et al, C1/L15-23), the references do not teach reacting from 2 to 8 % by weight, based on the weight of the natural oil, of a sulfite - calculated as sodium bisulfite ($Na_2S_2O_5$).

However, modified Davis et al does teach a sulfitation reaction. Therefore, since reaction rate is a variable that can be modified by adjusting the weight percentage of the reactant sulfite, the weight percentage of the reactant sulfite would have been considered a result effective variable by one having ordinary skill in the art at the time the invention was made. As such, without showing unexpected results, the claimed weight percentage cannot be considered critical. Accordingly, one of ordinary skill in the art at the time the invention was made would have optimized, by routine experimentation, the weight percentage of the reactant sulfite to obtain the reaction rate desired (*In re Boesch*, 617 F.2d. 272, 205 USPQ 215 (CCPA 1980)), since it has been held that where the general conditions of the claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. (*In re Aller*, 105 USPQ 223).

While modified Davis teaches an oxidized sulfated natural oil, the references do not teach the oxidized, sulfated natural oil is obtained by oxidizing natural oil so that the difference Δd between the specific gravities of the unoxidized and oxidized natural oil is from 0.01 to 0.1 g/ml and then reacting the natural oil oxidized in this manner with from 3 to 9 % by weight, based on its weight, of H2SO4 - calculated as 98% strength by weight aqueous H2SO4 solution.

Lighthipe et al teaches sulfation of a mixture of blown peanut oil, the term "blown" referring to oxidized and/or polymerized products of oils and fats (C1/L48-54), and natural peanut oil in the presence of sulfuric acid (C7/L21-47).

Modified Davis et al and Lighthipe et al disclose analogous inventions related to sulfated products used for fat-liquoring hides and skins. Therefore, it would have been obvious to one having ordinary skill in the art at the time of invention to oxidize a natural oil, mix it with the corresponding raw natural oil, and sulfate the mixture for the purpose of obtaining a sulfated natural oil.

Modified Davis et al does not teach difference Δd between the specific gravities of the unoxidized and oxidized natural oil is from 0.01 to 0.1 g/ml.

However, modified Davis et al does teach that the viscosity of blown, or oxidized, natural oils can be altered by the addition of raw natural oils, and that the overall viscosity of the mixture should be kept such that the resulting sulfated product is not gummy (Lighthipe et al, C3/L50-70), which suggests that the amount of unoxidized and oxidized natural oil should be controlled such that the resulting sulfated product is not gummy. Since the difference Δd between the specific gravities of the unoxidized and oxidized natural oil is indicative of the amount of unoxidized natural oil relative to the amount of un-oxidized natural oil, one having ordinary skill in the art would have optimized the difference Δd between the specific gravities of the unoxidized and oxidized natural oil to achieve a desired viscosity. Therefore, since the viscosity is a variable that can be modified by adjusting the difference Δd between the specific gravities of the unoxidized and oxidized natural oil, the difference Δd between the

specific gravities would have been considered a result effective variable by one having ordinary skill in the art at the time the invention was made. As such, without showing unexpected results, the claimed the difference Δd cannot be considered critical. Accordingly, one of ordinary skill in the art at the time the invention was made would have optimized, by routine experimentation, the difference Δd to obtain the desired viscosity (*In re Boesch*, 617 F.2d. 272, 205 USPQ 215 (CCPA 1980)), since it has been held that where the general conditions of the claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. (*In re Aller*, 105 USPQ 223).

While modified Davis et al teaches using sulfuric acid (Lighthipe et al, C7/L21-47), the references do not specifically teach 3 to 9 % by weight, based on its weight, of H2SO4 - calculated as 98% strength by weight aqueous H2SO4 solution.

However, modified Davis et al does teach that the degree of sulfation is considered of importance. Therefore, since the level of sulfation is a variable that can be modified by adjusting the weight percentage of sulfuric acid, the weight percentage of the sulfuric acid would have been considered a result effective variable by one having ordinary skill in the art at the time the invention was made. As such, without showing unexpected results, the claimed weight percentage cannot be considered critical. Accordingly, one of ordinary skill in the art at the time the invention was made would have optimized, by routine experimentation, the weight percentage of sulfuric acid to obtain the level of sulfation desired (*In re Boesch*, 617 F.2d. 272, 205 USPQ 215 (CCPA 1980)), since it has been held that where the general conditions of the claim are

disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. (*In re Aller*, 105 USPQ 223).

9. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Davis et al (US patent 2,283,540) in view of Friese et al (US patent 4,903, 362) in further view in view of Birkhofer et al (US patent 5,914,442) as applied to claim 11 in further view of Bay et al (US 4,701,269).

With regards to claim 15, modified Davis et al teachs all of the claim limitations set forth above.

Modified Davis et al does not teach a polymer having a viscosity of from 30 to 1,000 mPa.s, measured in the pure substance at 20°C.

Bay et al discloses a process for waterproofing leather and skins using silicone oil and an emulsifier in aqueous phase (see abstract). Furthermore, Bay et al discloses that suitable silicone oils are commercial silicone oils having viscosity 30 to 1000 mPa.s (C2/L49-51).

Modified Davis et al and Bay et al disclose analogous inventions related to treating leather and skins. Therefore, it would have been obvious to one having ordinary skill in the art to incorporate silicone oil having viscosity 30 to 1000 mPa.s as taught by Bay et al in to the fat-liquoring agent taught by modified Davis et al for the purpose of waterproofing leather and skins during a fat-liquoring process.

10. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Davis et al (US patent 2,283,540) in view of Friese et al (US patent 4,903,362) in further view in view of Birkhofer et al (US patent 5,914,442) as applied to claim 11 in further view of Friese et al (US patent 4,744,794, hereafter Friese '794)

With regards to claim 16, modified Davis et al teaches all of the claim limitations set for above.

Modified Davis et al does not teach a compound of the formula (II) wherein R1 and R2, independently of one another, are selected from the group consisting of methyl, ethyl, propyl, isopropyl, n-butyl, sec-butyl, tert-butyl, n-pentyl, isopentyl, n-hexyl, 2-ethylhexyl, n-octyl, n-dodecyl, n-tridecyl, n-tetradecyl and n-hexadecyl and/or M+ is H+ or Na+.

Friese '794 teaches that sulfosuccinic acid esters may be used as fat-liquoring agents, said sulfosuccinic acid esters having fatty residues derived from C8-24 oxoalcohols, among others (C2/L33) and that said sulfosuccinic acid esters are used in the form of their salts, preferably sodium and/or ammonium salts (C2/L40-42). Friese '794 further teaches that sulfosuccinic acid esters are added together with emulsifiers during a tanning process (C2/L56-57), thereby resulting in very supple leather and skins (C2/L66).

Modified Davis et al and Friese '794 disclose analogous inventions related to fat-liquoring of leather. Therefore, it would have been obvious to incorporate the sodium salts of sulfosuccinic acid esters taught by Friese '794 into the composition taught by modified Davis et al for the purpose of obtaining very supple leather and skins.

***Conclusion***

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to RAYMOND CHUNG whose telephone number is (571)270-3881. The examiner can normally be reached on Monday-Thursday, 9am-6pm EST, Alt. Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on 571-272-1119. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Lorna M Douyon/
Primary Examiner, Art Unit 1796

/R.C./
12 June 2008